Chicago-Kent Journal of Intellectual Property

Volume 20 | Issue 2 Article 3

8-26-2021

Patents Are Not Probabilities: Refuting the Probabilistic Patent Theory

Bryan Gant

Patents Are Not Probabilities: Refuting the Probabilistic Patent Theory

BY BRYAN GANT*

The probabilistic patent theory espoused by Carl Shapiro and Mark Lemley suggests that the lawful term of a patent is limited by the probability that the patent will be held valid and enforceable. For example, under this theory a patent with a 60% chance of being held valid and enforceable would lawfully grant 60% of a statutory patent term; any enforcement beyond that point would risk violating the antitrust laws.

This article explains that Shapiro and Lemley's theory has at least three fatal flaws: First, it depends on a "judicially-created" view of patents the Supreme Court has since rejected in Oil States Energy Services v. Greene's Energy Group. *Second, it mistakes a decrease in the value of property in light of litigation risk for a decrease in the ownership or scope of the property; as with all other forms of litigation regarding property, patent litigation may be "probabilistic" but the property in dispute is not. Third, because no patent is without some (often undefinable) level of risk, this theory would shorten the enforceable term of every patent—and would moreover do so to an un undeterminable extent.*

Finally, the article refutes the suggestion, adopted by the California Supreme Court, that the U.S. Supreme Court adopted the probabilistic patent theory in its 2013 decision in FTC v. Actavis, Inc. *As the article demonstrates,* Actavis *instead applied a theory based only on the probabilities of litigation, not the probabilities of a patent.*

* Bryan Gant is a partner in the Global Competition Group of White & Case LLP and represents defendants in ongoing cases involving antitrust and patent issues. The views expressed herein are his own, and do not necessary reflect the views of White & Case or its clients. He would like to thank Prof. Daniel Sokol, Tripp Odom, and Helen J. Gant for their comments and suggestions.

TABLE OF CONTENTS

I. INTRODUCTION

Under the flawed "probabilistic" theory of patents, first put forward by the economist Carl Shapiro in 2001 and expanded upon by Shapiro and Mark Lemley in an oft-cited 2005 article, patent rights would not truly exist unless and until the patent was upheld and enforced by a court, and the risk that the court might not uphold and enforce the patent would decrease not just the value but, remarkably, also the lawfully-enforceable *term* of the patent.[1] Patent rights would be "probabilistic" under this theory because they would depend on the probability of a court ruling in favor of the patentee; if the patentee was 60% likely to prevail in patent litigation, it would presumably be lawfully entitled to enforce the patent for just 60% of the statutorily-granted term.

The probabilistic patent theory has at least three fatal flaws, however.

First, the probabilistic patent theory assumes a judicial role in the creation of patent rights, but the Supreme Court has since rejected the existence of any such judicial role. Under this theory, only a court's enforcement of a patent creates patent rights, and as such those rights are necessarily limited by the probability that the patentee will or will not convince a court to enforce the patent. However, the Supreme Court in *Oil States Energy Services v. Greene's Energy Group* recently instructed that patent rights are a creation of statute—not a creation of the judicial process.[2] Thus no court ruling is required to create enforceable patent rights, as the probabilistic patent theory assumes.

Second, the probabilistic patent theory confuses a potential decrease in the *value* of disputed property for a decrease in the *ownership* or *scope* of that property. Litigation may be probabilistic, and the threat or existence of litigation may thus make a given piece of property less valuable for resale on an open market. However, the underlying property itself—whether the fox in the famous law school brainteaser *Pierson v. Post*,[3] the hypothetical

1. *See, e.g.*, Carl Shapiro, *Antitrust limits to patent settlements* 34 RAND J. Econ. 391, 395 (2003) (originally circulated 2001); Carl Shapiro and Mark Lemley, *Probabilistic Patents*, 19 J. ECON. PERSP. 75 (2005); Keith Leffler & Cristofer Leffler, *The Probabilistic Nature of Patent Rights: In Response to Kevin McDonald*, 17 Antitrust 77 (Summer 2003); Areeda & Hovenkamp, Antitrust Law § 2046f5 (adopting the probabilistic view). *See also* Kevin McDonald, *Hatch-Waxman Patent Settlements and Antitrust: On "Probabilistic" Patent Rights and False Positives*, 17 Antitrust 68 (Spring 2003). Prior authors had suggested changing the patent laws to make patents probabilistic; Shapiro, however, was the first to suggest that they already were. *See, e.g.*, Ian Ayres and Paul Klemperer, *Limiting Patentee's Market Power Without Reducing Innovation Incentives: The Perverse Benefits of Uncertainty and Non-Injunctive Remedies*, 97 Mich. L. Rev. 985 (Feb. 1999).

2. 138 S. Ct. 1365, 1373 (2018) ("granting patents is one of the constitutional functions that can be carried out by the executive or legislative departments without 'judicial determination.'") (quoting Crowell v. Benson, 285 U.S. 22, 50-51 (1931); Ex parte Bakelite Corp., 279 U.S. 438, 451 (1929)).

3. 3 Cai. R. 175 (N.Y. 1805).

Blackacre estate, a copyright, or a patent—is not probabilistic, i.e., it need not be shared among the litigants based on their odds of litigation success. Rather, the property is owned in full by someone, whether or not we immediately know who, with definable boundaries even if those boundaries are disputed.

Third, patents would be a very strange form of property under the probabilistic patent theory: One whose boundaries change based on such external variables as whether the patent was before a favorable judge, whether the patentee hired a skilled advocate, and whether that advocate was having a good day in court. And because no patent is completely free of litigation risk, even if previously upheld by a court, no patentee would be entitled to the full patent term granted by Congress. The probabilistic patent theory would thus undermine the value of patents generally.

Nor does the probabilistic patent theory draw support from the Supreme Court's 2013 decision in *FTC v. Actavis, Inc.*,[4] as at least one state court has subsequently concluded.[5] If anything *Actavis*—which addressed the legality of so-called "reverse payment" patent settlements—holds only that patent *litigation* may be probabilistic, and that a settlement that short-circuits the patent litigation process thus might require further antitrust analysis. The patent itself, however, is no more probabilistic than any other form of property might be, and, indeed subsequent courts have held that the patent therefore survives the *Actavis* analysis.

II. THE PROBLEM WITH PROBABILISTIC PATENTS: THREE FATAL FLAWS UNDERMINE SHAPIRO AND LEMLEY'S PROBABILISTIC PATENT THEORY

Patents are property. As the Supreme Court has said, "[t]he Patent Act provides that, '[s]ubject to the provisions of this title, patents shall have the attributes of personal property.'"[6] And like other forms of property, a patent offers the right to exclude—here, the right to exclude others from practicing the patent for the length of the patent grant.[7] As the Court thus reiterated

4. 570 U.S. 136 (2013).

5. *In re* Cipro Cases I & II ("Cipro (Cal)"), 61 Cal. 4th 116, 143 (Cal. 2015).

6. *Oil States*, 138 S. Ct. at 1375 (quoting 35 U. S. C. §261); *see also* United States v. American Bell Telephone Co., 128 U.S. 315, 370 (1888) (patent rights the "private property of the patentee"); McCormick Harvesting Machine Co. v. Aultman, 169 U. S. 606, 609 (1898) ("[A granted patent] has become the property of the patentee"); Brown v. Duchesne, 60 U.S. 183, 197 (1857) ("[T]he rights of a party under a patent are his private property").

7. U.S. Const. art. I, § 8, cl. 8 (patents provide inventors "for limited times . . . the exclusive right to their respective . . . discoveries").

recently, "[w]hile a patent lasts, the patentee possesses exclusive rights to the patented article."[8]

However, some scholars—most prominently Shapiro and Lemley—have advocated a "probabilistic" theory of patents under which a patentee does not have exclusive property rights, but rather only the *possibility* of such exclusive rights based on a probability of the patent being enforced in court, such that a patent's term and value must be divided between the patentee and would-be infringers based on litigation risk.[9] For example, imagine a presumptively-valid patent with a 20-year statutory term that is 95% likely to be upheld and enforced if challenged.[10] Such an ironclad patent would be rare; experienced litigators will tell you that patent litigation is always uncertain and that even the strongest patent has some inherent and unavoidable risk (likely more than 5%) of invalidation, even if such invalidation could only be based on some legal or factual error by the courts.[11] Under the probabilistic patent theory, though, this ironclad patent is presumably not a "20 year" patent but rather a "19 year" patent—95% of 20 years—because the patentee must share 5% with patent challengers to account for the 5% risk of invalidation, or else potentially violate the antitrust laws.

But the probabilistic patent theory is simply wrong, for at least three main reasons.

A. First Fatal Flaw: The Probabilistic Patent Theory Depends on a "Litigation Created Rights" Theory of Patents the Supreme Court Has Rejected

First, the probabilistic patent theory depends on a "litigation created" view of patent rights that the Supreme Court has since rejected. Some, including not just Shapiro and Lemley but also the California Supreme Court, have argued that patent rights are probabilistic because patent enforcement can only be accomplished by showing patent validity and

8. Kimble v. Marvel Ent't, LLC, 576 U.S. 446, 451 (2015).

9. *See, e.g.*, Shapiro & Lemley, *supra* note 1 at 75; Leffler & Leffler, *supra* note 1; Shapiro, *supra* note 1; McDonald, *supra* note 1.

10. 35 U.S.C. § 154(a)(2); 35 U.S.C. § 156.

11. *See, e.g.*, Kent S. Bernard and Willard K. Tom, *Antitrust Treatment of Pharmaceutical Patent Settlements: The Need for Context and Fidelity to First Principles*, 15 Fed. Cir. Bar. J. 617, 627 (2006) ("It is an old litigators' adage that when your case is an absolute, slam-dunk, sure thing, there is a 15% chance of losing."); Whitmore v. Arkansas, 495 U.S. 149, 159-160 (1990) ("[I]t is just not possible for a litigant to prove in advance that the judicial system will lead to any particular result in his case."); *In re* Ciprofloxacin Hydrochloride Antitrust Litig., 261 F. Supp. 2d 188, 200 (E.D.N.Y. 2003) ("a legal theory dependent on predicting the outcome of a specific lawsuit is unduly speculative"); Mathewson Corp. v. Allied Marine Industries, Inc., 827 F.2d 850, 855 (1st Cir. 1987) ("no broad market by which one can measure precisely the objective value of a lawsuit").

infringement in a court.[12] Under this view, patent rights are probabilistic because they are (the theory goes) a creation of litigation, which is itself probabilistic.[13] Thus, as Shapiro and Lemley put it, the right granted by a patent would be considered not "the right to exclude but rather a right to try to exclude by asserting the patent in court."[14] This is both incorrect and irrelevant.

As the Supreme Court recently explained in *Oil States Energy v. Greene's Energy*, patents are a particular kind of property right: the right to a franchise created by *statute*, not by courts.[15] The non-judicial nature of patents was essential to the Court's decision in that case to uphold Congress's adoption of an *inter partes* patent review system *outside* of the judicial system—it was only because patents do not require any judicial stamp of approval that they could be reviewed through proceedings that did not require a court.[16] And the Supreme Court's conclusion was moreover consistent with Congress's statement in the Patent Act that a patent is presumptively valid until a court (or the Patent and Trademark Office) holds otherwise, rather than invalid until validated by a court as the probabilistic theory of patents would assume.[17] The Supreme Court thus rejected a view of patent rights that must be "judicially determined" in order to be enforced—and in doing so rejected a key assumption underpinning the probabilistic patent theory.[18]

But the view of patents as litigation-created rights was incorrect even before *Oil States*. Shapiro and Lemley rested their theory on the factual assertion that only 0.1% of patents are litigated through trial, with roughly half of those patents then invalidated—such that only 0.05% of patents are

12. *See Cipro (Cal)*, 61 Cal. 4th at 143 ("A patent is, in effect, a right to ask the government to exercise its power to keep others from using an invention without consent."). Although *Cipro (Cal)* cited *Zenith Corp. v. Hazeltine*, 395 U.S. 100, 135 (1969), for this proposition, *Zenith* did not suggest that the patent grant was *only* the right to ask the government to enforce a patent—and on the contrary made clear that a patentee could treat the patent as property, for example by licensing it to others.

13. *See Cipro (Cal)*, 61 Cal. 4th at 143.

14. Shapiro & Lemley, *supra* note 1 at 75.

15. *See Oil States*, 138 S. Ct. at 1373 (permitting *inter partes* review because the statutory scheme for patents permitted such reviews, and noting that "patents are public franchises that the Government grants to the inventors of new and useful improvements.") (quotations omitted).

16. *See id.* ("granting patents is one of the constitutional functions that can be carried out by the executive or legislative departments without 'judicial determination.'") (quoting *Crowell*, 285 U.S. at 50-51; *Bakelite*, 279 U.S. at 451).

17. 35 U.S.C. § 282(a) ("A patent shall be presumed valid."). *See also In re* Ciprofloxacin Hydrochloride Antitrust Litig., 363 F. Supp. 2d 514, 533 (E.D.N.Y. 2005) ("[T]he premise, as characterized by generic defendants, that every patent is 'a little bit invalid,' results in undermining the presumption of validity that Congress has afforded patents").

18. *See Oil States*, 138 S. Ct. at 1373.

successfully enforced through judicial action.[19] This suggested to Shapiro and Lemley that a patent right is little more than a lottery ticket which can in rare cases allow a patentee to exclude others and earn valuable returns, and thus that patent rights should not be seen as legitimate unless and until a court says that they are.[20] However, even after adopting these figures, 99.95% of patents are *not* invalidated, and thus presumably would maintain their full patent term.[21]

In response, Shapiro and Lemley argued that this number is so high only because most patents are not enforced in court, and further suggested that such lack of enforcement means that the patents must not be worth enforcing—that patents not enforced in court are more or less worthless, and need not be considered property rights at all in the traditional sense.[22] However, most property rights do not *need* to be enforced in court.[23] Anyone who has sent or received a cease-and-desist letter can attest that intellectual property can be enforced through private action. Moreover, private enforcement often does not require even such affirmative steps; most people will not intentionally trespass on someone else's property, or infringe intellectual property, even if not explicitly warned away. Thus, not only are property rights often privately enforced, they are also often self-enforcing—i.e., the rights are respected even without active enforcement.

Contrary to Shapiro and Lemley's assumption that only litigated patents are strong,[24] the strongest property rights are thus potentially the ones that no one would challenge. Just as no one wants to spend thousands or millions of dollars litigating against an ironclad title to Blackacre (the venerable estate that serves as the basis for many law school property hypotheticals), no one wants to spend millions of dollars challenging a completely insurmountable patent. Indeed, perversely, the probabilistic theory of patents would change this dynamic. Because even a speculative challenge would shave some portion off the patent term and allow a challenger to enter sooner, merely by creating a greater risk (however remote) that the patentee might not win the resulting litigation, challengers with little chance of success would have reason to bring even meritless challenges to shorten the "probabilistic" patent term.

19. Shapiro & Lemley, *supra* note 1 at 75-76.

20. *Id.* at 80-81.

21. *Id.* at 82–83.

22. *Id.* at 75–76.

23. *Id.* at 94. (Shapiro & Lemley do recognize that "[v]irtually every licensing agreement can be seen as the settlement of a potential patent dispute." However, they fail to recognize that this is in fact a much more common way to reach agreement than the full-blown expense of litigation.)

24. *See id.* at 75–76.

Nor is it any answer to say that the enforceability of a patent depends on showing infringement rather than just validity and ownership. Infringement, after all, is nothing more than the patent equivalent of a boundary dispute over Blackacre. An alleged trespasser on Blackacre may respond by arguing that in fact Blackacre is not as large as its owner claims, and that its boundary thus stops short of where the trespasser has set up shop. A court might then be required to determine this boundary. But while we may not know how this boundary dispute will be resolved in the end, we do know that there is a boundary—Blackacre stops somewhere. Similarly, a potential infringer may argue that a patent is not as broad as the patentee claims, and thus that it does not reach the would-be infringer's product. In both cases, the *scope* of the property rather than the *ownership* of the property is at issue, but in neither case is the property thus probabilistic, and in neither case does the property depend on judicial determination to come into being.

Finally, even if patent rights were as routinely worthless as Shapiro and Lemley suggest, this would not mean that Congress granted those patent rights to any lesser degree. When Congress granted patent rights and established that such patents should be treated as valid absent clear and convincing evidence to the contrary,[25] it did not include a provision holding that such rights would go away to a certain degree if law professors ever became skeptical of the patent system. Thus, whether patents are generally strong or weak, they are presumptively valid.

B. Second Fatal Flaw: The Probabilistic Patent Theory Confuses a Decrease in the Value of Property for a Decrease in the Ownership or Scope of Property Rights

The second argument for a probabilistic view of patents is that a patent's value on an open market may depend on its likelihood of being upheld. Thus, for example, Shapiro and Lemley compare "probabilistic patents" to the ownership of a house in which the title is not entirely clear and suggest that because the value of this property may thus be reduced the property is probabilistic.[26] However, this does not follow. While true that a potential stain on the title may decrease the value of a piece of property at resale, no court would or could grant a title challenger, say, ownership of 10% of the property to reflect a 10% risk of the title being invalidated.

25. 35 U.S.C. § 282.
26. Shapiro & Lemley, *supra* note 1 at 76.

Shapiro and Lemley thus confuse probabilistic *litigation* for a probabilistic *title*. It is true that with any title there is risk of litigation, and further true that there is some probabilistic risk inherent in any litigation; as Shapiro and Lemley note, this is why title insurance exists.[27] But while the litigation is thus probabilistic, the title itself is not probabilistic; it is owned in full by someone, even if there may be some probability that it will not be the owner we think.

To understand the distinction, consider *Pierson v. Post*, the famous New York Supreme Court case that continues to perplex law students 215 years later.[28] When Captain Jesse Pierson shot the fox Mr. Lodowick Post was pursuing, a court was required to determine whether the fox was the property of Captain Pierson, the shooter, or Mr. Post, the original pursuer.[29] Both hunters had a claim to ownership, and both faced some risk (or "probability") that the court might find their claim invalid and thus rule for the other party. The question was a close one, with the court ultimately relying on authority ranging from a 1707 English case involving ducks on a duck pond[30] to Puffendorf's Law of Nature and of Nations.[31] Indeed, although the appeals court concluded that Captain Pierson, as the individual who killed the fox, was the first to transform *ferae naturae* into property, future U.S. Supreme Court Justice Henry Brockholst Livingston dissented from the court's judgment, arguing that the dispute should have been put to an arbitration panel of sportsmen who likely would have ruled for Mr. Post.[32] And of course the trial court had ruled against Captain Pierson and in favor of Mr. Post.[33]

But while this was an exceedingly close case, and Captain Pierson and Mr. Post thus each faced some probability of losing, there was no suggestion of apportioning the fox according to the strength of each gentleman's respective legal claims. No one suggested that because Mr. Pierson had, say, a 51% chance of success, he should get 51% of the fox. Instead, someone owned the fox, and that person not only owned the whole fox but was permitted to deny ownership to all others. The litigation may have been "probabilistic," but the *fox was not*.

27. *Id.*

28. *Pierson v. Post*, 3 Cai. R. 175 (N.Y. 1805); *see also* Bethany R. Berger, *It's Not About the Fox: The Untold History of* Pierson v. Post, 55 DUKE L. J. 1089 (Apr. 2006) (for further explanation of this fascinating case).

29. *Pierson*, 3 Cai. R. 175.

30. *Keble v. Hickringill*, 11 Mod. 74, 88 Eng. Rep. 898 (King's Bench, 1707).

31. *Pierson*, 3 Cai. R. at 177, 179.

32. *Id.* at 180.

33. *Id.* at 175.

The court in *Pierson v. Post* was constrained to award the fox to either Captain Pierson or Mr. Post, rather than dividing it among them like King Solomon, because property "must be capable of exclusive possession or control."[34] Thus "property rights only exist if the person asserting the property right has a legitimate claim to the exclusive possession of that right and is capable of excluding others from such possession."[35] Whether one person owns it or another person owns it, *someone* owns it in full based on definable property rights, and those rights are exclusive of all others.[36] Thus even if Mr. Pierson may, mid-trial, have only been able to sell the fox for 51% of its value in light of the litigation risk he was facing, at no point did he own 51% of the fox—he was either the full owner of the fox or he was not.

Nor is there anything about intellectual property that would remove it from this paradigm. For example, when "The Wind Done Gone," a parody of Margaret Mitchell's "Gone With the Wind," was published, there was a dispute as to whether that parody infringed the Mitchell estate's copyright—but there was no suggestion that the estate was obligated to share the copyright based on its odds of success in litigation.[37] Rather, the question was the "boundaries" of that copyright, and whether it extended to preclude the publishing of a parody.

Finally, a patent is likewise property and not simply the possibility of property. While it is of course true that an ironclad patent could be sold on an open market for more than a weak patent, this difference in value does not equate to a difference in ownership or a difference in scope any more than would be the case with a fox, a piece of real property, or a copyright. Patents are thus not probabilistic, even if patent litigation may be.

34. *Kremen v. Cohen*, 337 F.3d 1024, 1030 (9th Cir. 2003) (quoting *G.S. Rasmussen & Assocs. v. Kalitta Flying Serv.*, 958 F.2d 896, 902-03 (9th Cir. 1992)).

35. *Alderson v. United State*s, 718 F. Supp. 2d. 1186, 1197 (C.D. Cal. 2010) (collecting authority).

36. *See, e.g.*, *Ruckelshaus v. Monsanto Co.*, 467 U.S. 986, 1011 (1984) ("The right to exclude others is generally one of the most essential sticks in the bundle of rights that are commonly characterized as property."); *Kaiser Aetna v. United States*, 444 U.S. 164, 179-80 (1979) ("The 'right to exclude[]' [is] universally held to be a fundamental element of the property right") (quoting *Int'l News Svc. v. Assoc. Press*, 248 U.S. 215, 250 (1918) (Brandeis, J., dissenting)).

37. *See SunTrust Bank v. Houghton Mifflin Co.*, 268 F.3d 1257, 1259 (11th Cir. 2001).

C. Third Fatal Flaw: The Probabilistic Theory of Patents Would Shorten Patent Terms by an Undefinable Amount

i. Litigation Probabilities, and Thus Probabilistic Patent Terms, Cannot Be Perfectly Predicted

Finally, adopting a probabilistic patent approach would lead to substantial uncertainty regarding patent terms. The only thing that would be clear, under this theory, would be that no patent would last for its Congressionally-mandated term—all patents would be shortened by some amount, with no one able to truly say by how much. This is so for four reasons:

First, litigation probabilities are hardly fixed in stone at the moment of a patent's creation, and on the contrary could change even day to day or minute to minute. Imagine that the same "95%" patent we mentioned above is challenged and the case assigned to an unfavorable judge—one who tends to invalidate patents, or simply one who may not be as experienced in the patent law area. This lowers the probability of success to a "mere" 90%. In that case, the patent term is now 18 years under a probabilistic patent theory because the probability of successful enforcement has gone down due to something completely unrelated to the patent merits—the random turn of an assignment wheel. Now imagine that there is a hearing. The patentee's counsel gets up, the argument goes well, and the patent is up to 95%. But then the challenger's counsel gets up, their argument also goes well, and the patent is back down to 90% again. The patent, in that example, changes its term by a year—from 18 years to 19 and then back to 18—based on which lawyer happens to be at the podium.[38] What a strange property right this would be.[39]

Second, the term might vary based on which lawyer the patentee hires. One author has suggested that because patent rights are purportedly probabilistic, they are also necessarily "malleable" in the sense that their probability of enforcement will be dependent on the potential "players" (attorneys, judges, etc.) involved.[40] Thus, the term of a probabilistic patent would depend not on the novelty of the invention, the strength of the claims, or the infringement of the patent challenger, but rather on which side hired

38. *See* Jason Rantanen, *The Malleability of Patent Rights*, 2015 Mich. St. L. Rev. 895, 929-30 (2015) (arguing that patent rights are "malleable" in the sense that they change based on the particular parties at issue).

39. *See id.* There are, of course, many other ways that a patent might end up shortened under this approach, including changes in the case law or shifts in patent valuation methods.

40. *See id.* ("And just like a contest, a sport, a game, patent litigation—and by extension, the patent right itself—is affected by the participants in that game.").

the fancier lawyer.[41] Among other issues, this would grant greater patent terms to patentees with deeper pockets, who are able to hire famous litigators and on that basis alone have a higher probability of success. But more fundamentally, it would make patent rights dependent on something extraneous to the patent or the would-be infringer—indeed, something having nothing to do with the patent merits whatsoever.

Third, because patent enforcement depends on proving infringement, the probability of successfully doing so may vary based on the counterparties. A patentee may have a 95% chance of enforcing its patent against Infringer A, but only a 90% chance of enforcing its patent against Infringer B. Under a probabilistic patent theory, then, the patentee would hold a 19 year patent as against Infringer A but only an 18 year patent as against Infringer B.[42] In order to determine the appropriate term of such a patent, the patentee would thus need to determine the merits of every aspect of each of the potential infringers' non-infringement arguments in each of the potential patent disputes, which is surely an impossible task.

Finally, when discussing these probabilities, we act like there is some sort of magical scoreboard that records the odds of winning a patent case. There is not. Nor are these probabilities scientifically-derived by litigating the same case hundreds of times, and then calculating the average outcomes. Rather, they are simply educated guesses made by lawyers and litigants, often based on limited information.[43] So, then, whose views should we credit for determining the probabilities? For example, imagine that there are two patentees. One says the patent is 95% likely to be upheld and enforced; the other says 90%. Should we credit the optimist? The pessimist? The patent challenger? Someone else entirely?

Because there is no way to know the "right" probability for any given patent, probabilistic patents would have terms that constantly fluctuate, and in effect cannot be determined, particularly ex ante. But one thing is certain: because even the strongest imaginable patent is never 100% guaranteed to be upheld, no patent would have the term Congress granted.

41. *See id.* at 929 n. 138 (comparing patent litigation to a sport and noting that "[i]n sports, some events are due to chance; much is also due to the skill of the individual players").

42. *See id.* at 929–30.

43. Litigants famously tend to view their odds of success as higher than they really are. *See, e.g.*, DWIGHT GOLANN, MEDIATING LEGAL DISPUTES: EFFECTIVE STRATEGIES FOR NEUTRAL ADVOCATES 217 (1996) (if litigants are asked to estimate their odds of success, the combined total is likely to exceed 150 percent).

ii. Litigating a Patent Does Not Solve This Problem

Nor does the litigation process offer a solution to this problem. The underlying assumption in the probabilistic patent theory seems to be that, if a patent was exhaustively litigated (including appeals), the litigation would conclusively establish a patent's validity and enforceability.[44] Thus, the theory seems to suggest, the only problem is that patents are not litigated as frequently as they should be. This view is badly mistaken, however.

First, it is no answer to say that patents become probabilistic only once they are litigated; if patent rights were probabilistic, then the mere *chance* that someone could bring a challenge should be sufficient to shorten the lawfully-enforceable patent term, even if only slightly. And while some might expect that patent challenges would be brought only where patents are weak, this is not true—particularly in the pharmaceutical area, where the Hatch-Waxman Act permits a patent challenge without the would-be infringer risking damages, and thus where it can be economically rational to bring even longshot patent challenges.[45] Moreover, if patents were probabilistic, any potential infringer would have an incentive to challenge any patent regardless of its strength or weakness; merely doing so would, after all, somewhat increase the likelihood of potential patent invalidation, and on that basis alone would shorten the patent term.

Second, litigation is not a solution to this problem because even a verdict in favor of the patentee would not result in a "100% patent," except with respect to the particular infringer at issue in that particular case. Even if a patent is found to be valid and infringed by one challenger, collateral estoppel often will fail to fully bar a subsequent challenge by another patent challenger.[46] So while an upheld patent might become, say, a "98% patent"—highly unlikely to ever be invalidated—there is never zero risk. There could always be another patent challenger, there will thus always be some risk with any patent, and every patent would therefore have something less than the full statutory term granted by Congress.

44. *See* Shapiro & Lemley, supra note 1 at 75–76.

45. *See, e.g.*, *Schering-Plough Corp. v. FTC*, 403 F.3d 1056, 1074-75 (11th Cir. 2005) ("[T]he Hatch-Waxman Amendments grant generic manufacturers standing to mount a validity challenge without incurring the cost of entry or risking enormous damages flowing from any possible infringement. Hatch-Waxman essentially redistributes the relative risk assessments.") (internal citations omitted) (*superseded on other grounds* by *Actavis*, 570 U.S. 136); *MedImmune, Inc. v. Genentech, Inc.*, 535 F. Supp. 2d 1020, 1031 (C.D. Cal. 2008) ("patentees in Hatch-Waxman cases have no claim for damages, yet must typically defend the validity of their patents").

46. *See, e.g.*, *Blonder-Tongue Labs. v. Univ. of Ill. Found.*, 402 U.S. 313, 329 (1971) ("Some litigants—those who never appeared in a prior action—may not be collaterally estopped without litigating the issue. They have never had a chance to present their evidence and arguments on the claim. Due process prohibits estopping them despite one or more existing adjudications of the identical issue which stand squarely against their position.").

Finally, while litigating a patent all the way through every patent challenge may protect the patentee from later antitrust challenge, and thus create a *de facto* "100% patent," even this does not cure the core problem because it still assumes that patent enforcement is inherently anticompetitive. For example, a patentee with a "95% patent" that wants the full term might choose to litigate to the very end against every challenge, never settling and always taking the litigation all the way to the Supreme Court. Because the patentee successfully petitioned a court in each case, presumably the *Noerr Pennington* doctrine would protect the patentee from antitrust liability for such enforcement.[47] This would thus be a way (likely the only way) to obtain 100% of a patent term. But even so, *Noerr Pennington* protection would merely shift the blame to the court rather than the patentee; even such successful enforcement of a patent would still be (incorrectly) viewed as the anticompetitive enforcement of a "95% patent" for 100% of the term. Patent litigation is thus not a solution to the problems posed by the probabilistic patent theory.

III. *FTC V. ACTAVIS* DOES NOT ADOPT A PROBABILISTIC VIEW OF PATENTS

The probabilistic patent theory is therefore contrary to law and would fundamentally undermine the value of the patent system. Nonetheless, some courts and commentators have suggested that the Supreme Court's 2013 decision in *FTC v. Actavis, Inc.*[48] secretly adopted a probabilistic theory of patents—and thus silently worked a sea change in the patent laws.[49] As detailed below, however, this reading of *Actavis* is incorrect as *Actavis* instead adopted only a theory based on the probabilistic nature of patent *litigation*, not on probabilistic patents.

A. The Problem *Actavis* Sought to Solve: Schrödinger's Patent

Actavis addressed the potential for antitrust challenges to so-called "reverse payment" settlements, in which a patentee makes a "large" "unexplained" payment to a would-be infringer in exchange for the infringer dropping a challenge to the patent's validity:[50]

47. *See Professional Real Estate Investors v. Columbia Pictures Indus.*, 508 U.S. 49 (1993).

48. 570 U.S. 136 (2013).

49. *See Cipro (Cal)*, 61 Cal. 4th at 143 ("Indeed, a critical insight undergirding *Actavis* is that patents are in a sense probabilistic, rather than ironclad: they grant their holders a potential but not certain right to exclude."); *but see Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2153 (2016) (Alito, J., dissenting) (recognizing the difference between (a) the "probabilistic" question of whether a patent challenger is likely to succeed and (b) the ultimate question of the patent's validity).

50. *Actavis*, 570 U.S. at 156.

> Company A sues Company B for patent infringement. The two companies settle under terms that require (1) Company B, the claimed infringer, not to produce the patented product until the patent's term expires, and (2) Company A, the patentee, to pay B many millions of dollars. Because the settlement requires the patentee to pay the alleged infringer, rather than the other way around, this kind of settlement agreement is often called a "reverse payment" settlement agreement. And the basic question here is whether such an agreement can sometimes unreasonably diminish competition in violation of the antitrust laws.[51]

Determining the competitive impact of a reverse payment generally requires first establishing whether the patent at issue is valid and infringed.[52] If so, then any settlement that merely requires the challenger to stay off the market during the patent term cannot be anticompetitive, because it would do no more than reflect the patentee's preexisting exclusionary rights. Indeed, because many such agreements in fact allow the challenger onto the market on a date prior to patent expiration, such an agreement may benefit competition when compared to enforcing a valid and infringed patent.[53] On the other hand, if the patent would have been held invalid or not infringed, then agreeing to drop the patent challenge in return for payment could (the Court held) harm competition in some cases.[54]

Courts assessing the competitive impact of such a settlement thus face what might be called "Schrödinger's patent"[55]—a patent that is either valid

51. *Id.* at 140–41.

52. *See, e.g.*, *Cipro (Cal)*, 61 Cal. 4th at 138 (explaining this challenge).

53. Indeed, several courts adopted the "scope of the patent" test on this basis, concluding that where the litigation did not result in invalidation of a presumptively-valid patent then the competitive impact of any settlement of that litigation must be measured against the competitive impact of the patent itself. *See, e.g.*, *FTC v. Watson Pharms., Inc.*, 677 F.3d 1298, 1315 (11th Cir. 2012) (adopting the "scope of the patent" test); *see also In re* Tamoxifen Citrate Antitrust Litig., 466 F.3d 187 (2d Cir. 2006) (same); *In re* Ciprofloxacin Hydrochloride Antitrust Litig., 544 F.3d 1323 (Fed. Cir. 2008) (same); *Valley Drug Co. v. Geneva Pharms., Inc.*, 344 F.3d 1294 (11th Cir. 2003) (same).

54. *See* Br. for Petitioner at 46, *FTC. v. Actavis, Inc.*, 133 S. Ct. 2223 (2013), (No. 12-416), 2013 WL 267027; *In re* K-Dur Antitrust Litig., 686 F.3d 197 (3d Cir. 2012).

55. Erwin Schrödinger challenged the Copenhagen view of quantum mechanics that suggested that a quantum system can remain in superposition, *i.e.*, existing in multiple states, until observed. To test the Copenhagen model, Schrödinger proposed an experiment in which a cat placed inside a sealed metal box would be killed by poisonous gas if a radioactive atom with a 50% chance of decaying within an hour did so. Because under the Copenhagen model such an unobserved atom would be in superposition and thus would both simultaneously decay and not decay until observed, the cat would be both alive and dead until someone opened the box, something Schrödinger considered impossible. *See, e.g.*, *Cabantac v. Holder*, 736 F.3d 787, 792 n. 8 (9th Cir. 2013) (Murguia, J., dissenting) ("Schrödinger's cat, originating in quantum physics, is a symbol of something that exists in two contradictory states at the same time.") (citing *TKO Equip. Co. v. C & G Coal Co., Inc.*, 863 F.2d 541, 545 (7th Cir. 1988) ("In a famous *gedanken* experiment of quantum mechanics, Schrodinger's cat remains suspended between life and death in a box, neither alive nor dead until the box is opened and uncertainty about the decay of a radioactive particle is resolved.")).

or invalid, but whose validity cannot immediately be determined.[56] Several courts expressed concern that it might be impossible to determine whether the patent was valid or invalid, or that, at bare minimum, having a subsequent court re-try the patent case would defeat the point of settlement.[57] Faced with this problem, courts pre-*Actavis* presumed that the patent must be valid because Congress instructed courts to make such a presumption.[58] This became known as the "scope of the patent" test. Other courts, however, effectively assumed that the patent was either invalid or irrelevant.[59]

B. The *Actavis* Approach: Probabilistic Litigation, Not Probabilistic Patents

Rather than adopt either approach, *Actavis* purports to solve this problem a different way: by using the patentee's conduct to infer something about the likely expected outcome of the patent suit. Thus, the Court held that an "unexplained large reverse payment itself would normally suggest that the patentee has serious doubts about the patent's survival," and could be a "workable surrogate for a patent's weakness, all without forcing a court to conduct a detailed exploration of the validity of the patent itself."[60] Later commentators dubbed this the "*Actavis* inference."[61]

Importantly, although the California Supreme Court in *Cipro (Cal)* understood *Actavis* to thus adopt a probabilistic view of patents,[62] the U.S. Supreme Court never suggested that it was doing so. On the contrary, the U.S. Supreme Court acknowledged that even a large reverse payment might

56. *See Minnesota Mining & Mfg. Co. v. Chemque, Inc.*, 303 F.3d 1294, 1299 (Fed. Cir. 2002) ("while Schrodinger's cat may be both alive and dead at any given moment, even in theory, claim limitations cannot be concurrently both met and not met"); *Adrian v. Superchips, Inc.*, H-04-4117, 2006 U.S. Dist. LEXIS 25212, at *24-25 (S.D. Tex. Mar. 14, 2006) (similar). *Compare Actavis*, 570 U.S. at 171 (Roberts, J, dissenting) ("First, a patent is either valid or invalid. The parties of course don't know the answer with certainty at the outset of litigation; hence the litigation. But the same is true of any hard legal question that is yet to be adjudicated.").

57. *See, e.g.*, *Watson*, 677 F.3d at 1315 (discussing this problem, and the "turducken" task of trying a patent case in an antitrust case).

58. *See, e.g.*, *Watson*., 677 F.3d at 1315; Tamoxifen, 466 F.3d 187; Ciprofloxacin, 544 F.3d 1323; *Valley Drug*, 344 F.3d 1294.

59. *See, e.g.*, *K-Dur*, 686 F.3d 197.

60. *Actavis*, 570 U.S. at 157-58 (emphasis added); *id.* at 154-55 (reverse payment "signal[s] to other potential challengers that the patentee lacks confidence in its patent").

61. *Id.* at 158; Aaron Edlin, Scott Hemphill, Herbert Hovenkamp, & Carl Shapiro, *The* Actavis *Inference: Theory and Practice*, 67 RUTGERS L. REV. 585 (2015). Whether this "workable surrogate" actually works is a question for another day.

62. *Cipro (Cal)*, 61 Cal. 4th at 144 n.9 (citing, *e.g.*, Shapiro & Lemley, *supra* note 1; Shapiro, *supra* note 1); Mark Schildkraut, *Patent-Splitting Settlements and the Reverse Payment Fallacy*, 71 ANTITRUST L. J. 1033 (2003) (arguing against probabilistic patents)); *but see* Joshua B. Fischman, *The Circular Logic of Actavis*, 66 AM. U. L. REV. 91 (2016) (arguing that *Actavis*'s use of settlement terms to predict likely strength or weakness of a patent requires treating predictions about litigation as effectively determinative of litigation merits).

well signal nothing more than a small risk of invalidation, which the patentee nonetheless seeks to eliminate—meaning that a reverse payment cannot allow any inference of the *actual* validity/invalidity or infringement/non-infringement of the patent, but rather is useful only to show that there has been some foreclosure of the patent *litigation process*, that there is some undetermined potential patent vulnerability, and thus that there is some potential for harm to competition from the settlement.[63] Indeed, the U.S. Supreme Court noted that "patent and antitrust policies are both relevant in determining the scope of the patent monopoly."[64] And none of the cases *Actavis* cited contemplated a probabilistic approach.[65]

The better reading of *Actavis* is thus that it addressed the probabilistic outcome of the patent *suit*.[66] Unlike property, litigation has long been seen as inherently probabilistic; though challenging to do so, courts are familiar with the need to assess the probabilistic value of a case, for example, in assessing malpractice or other claims about the litigation process.[67] And

63. *Actavis*, 570 U.S. at 157-58 ("The owner of a particularly valuable patent might contend, of course, that even a small risk of invalidity justifies a large payment. But, be that as it may, the payment (if otherwise unexplained) likely seeks to prevent the risk of competition. And, as we have said, that consequence constitutes the relevant anticompetitive harm."); *see also* Barry Harris et al., *Activating* Actavis*: A More Complete Story*, 28 ANTITRUST ABA 83 (2014) (explaining why such settlements might be entered).

64. *Actavis*, 570 U.S. at 148.

65. *Id.* at 147-54 (citing United States v. Line Material Co., 333 U.S. 287, 308 (1948) ("[d]uring its term, a valid patent excludes all except its owner from the use of the protected process or product"); United States v. U.S. Gypsum Co., 333 U.S. 364, 388-91 (1948) (addressing only cross-licensing); Walker Process Equipment, Inc. v. Food Machinery & Chemical Corp., 382 U.S. 172, 174 (1965) (allowing claim only where patent obtained by fraud); United States v. Singer Mfg., 374 U.S. 174, 196-97 (1963) ("possession of a valid patent or patents does not give the patentee any exemption from the provisions of the Sherman Act beyond the limits of the patent monopoly"); United States v. New Wrinkle, 342 U.S. 371, 378 (1952) (challenge only to cross-licensing of patents); Standard Oil Co. v. United States, 283 U.S. 163, 179 (1931); United States v. General Elec. Co., 272 U.S. 476, 489 (1926) (patentee has valid right to exercise patent); Lear, Inc. v. Adkins, 395 U.S. 653, 672-73 (1969) (court must determine validity)).

66. Indeed, this is the understanding Justice Roberts appears to have had of the majority opinion, as he explained in dissent that "The majority seems to think that *even if* the patent is valid, a patent holder violates the antitrust laws merely because the settlement took away some chance that his patent would be declared invalid by a court." *Actavis*, 570 U.S. at 171 (Roberts, J., dissenting). *Cf.* In the Matter of Impax Laboratories, Inc., 2019 FTC LEXIS 25, at *68 (F.T.C. Mar. 28, 2019) (holding that in "*Actavis*, the Court recognized the inherently probabilistic nature of the underlying facts surrounding the settlement of Hatch-Waxman Act litigation: patent validity; patent infringement; the outcome of patent litigation; the willingness and ability of the generic drug manufacturer to launch at risk; and so on," but not suggesting that the patent was probabilistic).

67. *See, e.g.*, Gunn v. Minton, 586 U.S. 251, 262 (2013) (addressing role of patent in legal malpractice case, where the patent case presented a "case-within-a-case"); LNV Corp. v. Branch Banking & Trust Co., 723 Fed. Appx. 653, 658 (11th Cir. 2018) (noting that malpractice suits involve a "probabilistic" analysis of how a case would have come out); Tucker v. Comm'r, 676 F.3d 1129, 1134 (D.C. Cir. 2011) (IRS may accept taxes based on probabilistic estimate of tax litigation);); Fishman v. Estate of Wirtz, 807 F.2d 520, 533 (7th Cir. 1986) (loss of a "fair shot" at winning a monopoly was antitrust injury); N. Shore Gas Co. v. E.P.A., 930 F.2d 1239, 1242 (7th Cir. 1991) (probabilistic chance of winning lawsuit sufficient to support Article III standing); Sabine River Auth. v. U.S. Dep't of Interior,

unlike a patent, a patent *suit* exists across a range of potential risk-adjusted outcomes, including not only victory or defeat but also mixed results or settlement. What *Actavis* holds, therefore, is not that patents are probabilistic, but that when a patent settlement containing a large, unexplained reverse payment forecloses the normal patent litigation process, that foreclosure signals the possibility of a harm to competition—a harm that can be assessed, at least on a motion to dismiss, "without forcing a court to conduct a detailed exploration of the validity of the patent itself."[68]

IV. IMPLICATIONS OF REJECTING PROBABILISTIC PATENT THEORY

Rejecting the probabilistic patent theory has several important implications not only for patent law, but also for antitrust law.

A. A Patent May Be Enforced for the Congressionally Granted Term

The first, simplest, but in some ways most important implication of rejecting the probabilistic theory of patents is simply that patentees may continue to exercise the full term of their patent rights, rather than being forced to shorten them in accordance with the unknowable probability that the patent will be invalidated. Above we described the problem of a patentee trying to determine the enforceable term of its patent under a probabilistic patent theory—and the possibility that such term might depend on such vagaries as which attorney happened to be at the podium. If that were the law, patents would be an extraordinary exercise in guesswork. But, a patent remains a patent, including after *Actavis*, and no grand sea change has occurred.

B. Any Inference of Patent Weakness Is Rebuttable By Showing That the Patent Was Valid

The conclusion that patents are not probabilistic also raises an important caveat to *Actavis*, which is that the anticompetitive harm a court infers from a large, unexplained reverse payment may well be illusory.[69] While there

951 F.2d 669, 674 (5th Cir. 1992); In re Niaspan Antitrust Litig., 42 F. Supp. 3d 735, 755 & n.15 (E.D. Pa. 2014) ("probabilistic harm . . . is neither foreign to antitrust jurisprudence nor to standing doctrine in other areas of the law") (emphasis added) (citing Bulletin Displays, LLC v. Regency Outdoor Advertising, Inc., 518 F. Supp. 2d 1182, 1191-92, 1194 (C.D. Cal. 2007)); Wolfinger v. Cheche, 206 Ariz. 504, 80 P.3d 783 (Ct. Ap. Az. 2003) (involving a wrongful institution of civil proceedings case about the institution of a wrongful institution of civil proceedings case, "a case within a case within a case").

68. *Actavis*, 570 U.S. at 158.

69. *See Actavis*, 570 U.S. at 171 (Roberts, J., dissenting) ("[S]ettling a patent claim *cannot possibly* impose unlawful anticompetitive harm if the patent holder is acting within the scope of a valid patent and therefore permitted to do precisely what the antitrust suit claims is unlawful. . . . I therefore

may be a shortcut to infer the possibility of patent weakness, if a court determines that the patent was in fact valid and infringed then virtually any settlement within the scope of that patent was procompetitive. The best reading of *Actavis* is thus that it makes an *inference* of potential anticompetitive harm based on the existence of a large, unexplained reverse payment, not an irrebuttable determination, and that that the patent thus continues to have a significant role to play in the rule of reason analysis under *Actavis* and any other case that might involve initial inferences of potential patent weakness.[70]

C. Private Plaintiffs Must Show Patent Weakness to Establish Antitrust Injury in *Actavis* Cases

Finally, because *Actavis* does not involve probabilistic patents, to show antitrust injury a plaintiff bringing claims under *Actavis* must show patent invalidity or non-infringement.

To assert an antitrust claim a private plaintiff must have antitrust standing—it must have suffered an "injury of the type the antitrust laws were intended to prevent and that flows from that which makes the defendants' acts unlawful."[71] Antitrust injury is a "distinct matter[] that must be shown independently" from the underlying antitrust violation.[72] Because it "is beyond fair dispute" that "a regulatory or legislative bar can break the chain of causation in an antitrust case," a private plaintiff must show that it was the large, unexplained reverse payment that caused generic entry to be delayed, and not instead the existence of a valid and infringed patent.[73]

don't see how the majority can conclude that it won't normally be 'necessary to litigate patent validity to answer the antitrust question,' unless it means to suggest that the defendant (patent holder) cannot raise his patent as a defense in an antitrust suit. But depriving him of such a defense—if that's what the majority means to do—defeats the point of the patent, which is to confer a *lawful* monopoly on its holder.").

70. This answers the concern expressed in *FTC v. Actavis, Inc. (In re Androgel Antitrust Litig. (No. II))*, 09-cv-955-TWT, 2018 U.S. Dist. 99716, at *55 (N.D. Ga. June 14, 2018), regarding the different outcomes potentially available for FTC and private actions. The court there noted that because the FTC does not need to show antitrust injury and antitrust standing, the FTC might have reverse payment claims even when a valid and infringed patent barred the same claims from private plaintiffs. The court noted that it "makes no sense" for "Defendants [to] both have a valid patent, and commit an antitrust violation" by enforcing that patent. *Id.* The answer, though, is that the FTC does not show an antitrust violation by showing a large, unexplained reverse payment; rather, it simply creates a rebuttable inference of harm, which can be refuted (among other ways) by the showing of a valid patent.

71. In re Wellbutrin XL Antitrust Litigation, 868 F.3d 132, 164 (3d Cir. 2017) (quoting Ethypharm S.A. France v. Abbott Labs., 707 F.3d 223, 233 (3d Cir. 2013) (quoting Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc., 429 U.S. 477, 489 (1977)); *see also* Atl. Richfield Co. v. USA Petrol., 495 U.S. 328, 344 (1990) ("[P]roof of [an antitrust] violation and of antitrust injury are distinct matters that must be shown independently. For this reason, . . . the right of action under § 4 of the Clayton Act is available only to those private plaintiffs who have suffered antitrust injury") (citations and quotation marks omitted).

72. In re Nexium (Esomeprazole) Antitrust Litigation, 842 F.3d 34, 60 (1st Cir. 2016).

73. *Wellbutrin*, 868 F.3d at 165 (citing RSA Media, Inc. v. AK Media Grp., Inc., 260 F.3d 10, 15 (1st Cir. 2001) ("That a regulatory or legislative bar can break the chain of causation in an antitrust case

Actavis did not eliminate this requirement; *Actavis*'s comments on patent validity were "only in the context of an antitrust violation, not causation"[74] as the plaintiff there was the FTC, which is not required to show antitrust injury.[75] Thus, while plaintiffs have argued that alleged reverse payments should themselves be sufficient to show that the patents were probabilistically invalid and thus not an independent bar to generic entry,[76] effectively seeking to use the probabilistic patent theory to show antitrust injury, at least two circuit courts have instead held that a plaintiff must actually *prove* that the patents at issue were "more likely than not" invalid/not infringed in order to show antitrust injury on that basis—i.e., that the patent "would have" been invalidated.[77] These courts thus recognize that plaintiffs cannot rely on a "probabilistic scope of the patent" test to show antitrust injury under *Actavis*, but rather must show that their injury derives from something other than a valid and infringed patent.

This conclusion also answers the courts that were concerned about trying to "recreate" the patent case as part of the antitrust case. For example, in *Androgel*, a court in the Northern District of Georgia understood the inquiry as requiring a determination of "the ultimate outcome of the underlying patent litigation."[78] Close, but not quite, because a court need not (as the court there suggested) "say how [the judge] would have ruled on the summary judgment motions, how [the judge] would have construed the claims, and whether [the judge] would have found infringement."[79] Rather,

is beyond fair dispute."); *In re* Canadian Import Antitrust Litig., 470 F.3d 785, 790-91 (8th Cir. 2006) (federal law prevented import of Canadian drug products regardless of drug companies' conduct with respect to such products); City of Pittsburgh v. W. Penn. Power Co., 147 F.3d 256, 265 (3d Cir. 1998) ("realities of the regulated environment" caused plaintiffs' injury)).

74. *Androgel*, 2018 U.S. Dist. 99716, at *54.

75. *See, e.g.*, *Nexium*, 842 F.3d at 60 (noting that "[p]rivate plaintiffs and the FTC as government enforcer stand in different shoes" and thus that the FTC "is empowered to directly enforce the substantive antitrust laws" while private plaintiffs must "satisfy the additional evidentiary burdens" of showing antitrust injury); *see also* Apotex, Inc. v. Cephalon, Inc., 255 F. Supp. 3d 604, 613-14 & n.3 (E.D. Pa. 2017) ("[A]lthough the *Actavis* Court stated that 'it is normally not necessary to litigate patent validity to answer the antitrust question,' that statement does not address a private plaintiff's causation requirement nor does it preclude examination of the validity of the patent where necessary.").

76. *Nexium*, 842 F.3d at 63; *Wellbutrin*, 868 F.3d at 167-68.

77. *See Nexium*, 842 F.3d at 63 (quoting *In re* Wellbutrin XL Antitrust Litig., 133 F. Supp. 3d 734, 765 n.46 (E.D. Pa. 2015)); *Wellbutrin*, 868 F.3d at 167-68 (noting that *Actavis* had concluded that "the size of a reverse payment may have some relevance in determining how confident a litigant is in the strength of its case," but that this "is far from dispositive" when the case is "complex and multi-faceted"); *see also Apotex*, 255 F. Supp. 3d at 613-14 (evidence of patent invalidity may be relevant to showing causation); *Androgel*, 2018 U.S. Dist. LEXIS 99716, at *50-54.

78. *Androgel*, 2018 U.S. Dist. LEXIS 99716, at *45.

79. *See id.*

the question is not "what would have happened," but rather simply "is there a valid and infringed patent"—a question courts know how to answer.[80]

Admittedly, this is not the only approach taken by courts; some courts have held that antitrust injury could be based on patent invalidity or non-infringement under a "could have won" standard, i.e., that if the generic could potentially have won the patent case and invalidated the patent / been held not to infringe, then the patent should be viewed as *de facto* invalid or not infringed for antitrust purposes.[81] However, this approach is incorrect for at least three reasons.

First, the "could have won" standard originated with a district court's misreading of a circuit court decision. In *Nexium* the First Circuit noted that the "plaintiffs did not present . . . evidence" of patent invalidity or non-infringement, and thus could not use such invalidity or non-infringement to survive summary judgment because obviously a plaintiff must present at least "some evidence" of what it seeks to prove.[82] Most could agree that whatever the evidentiary standard, it is greater than "no evidence at all." However, in *Lidoderm* a district court then took this proposition and over-analyzed it, holding that "'[s]ome evidence' is not the same as requiring plaintiffs to prove that the generic defendant *would have* won, only that it *could have*."[83] But *Nexium* never described the level of evidence required—it merely noted that the level of evidence required to overcome a presumptively valid patent by showing that it is invalid or not infringed is obviously something greater than "none."[84]

Second, because litigation is never risk-free, under a broad enough interpretation the generic almost always "could have won"—and thus the "could have won" standard is effectively no standard at all. As one court noted, "[o]bviously it is much easier to provide substantive proof of what could have happened as opposed to what would have happened," but that "evidence that the Generics *could* have won gets us no closer than we are now to answering the question of whether the Generics *would* have been able

80. Perhaps for this reason, the Third Circuit in *Fresenius Kabi USA, LLC v. Par Sterile Products, LLC*, 2021 U.S. App. LEXIS 614, at *12 (3d Cir. 2021), in a non-precedential opinion, held that *Androgel* was "irreconcilable with *Wellbutrin*" and thus should not be considered in the Third Circuit.

81. United Food & Commercial Workers Local 1776 & Participating Employers Health & Welfare Fund v. Teikoku Pharma USA, Inc. (*In re* Lidoderm Antitrust Litigation), 296 F. Supp. 3d 1142, 1155 (N.D. Cal. 2017); *see also In re* Solodyn (Minocycline Hydrochloride) Antitrust Litig., 2018 U.S. Dist. LEXIS 11921, at *54-55 (D. Mass. Jan. 25, 2018) (following *Lidoderm*).

82. *Nexium*, 842 F.3d at 63.

83. *Lidoderm*, 296 F. Supp. 3d at 1155; *see also Solodyn*, 2018 U.S. Dist. LEXIS 11921, at *54-55 (relying on *Lidoderm*'s error).

84. *Nexium*, 842 F.3d at 63.

to enter the market in a but-for world, or if a valid patent *would* have prevented them."[85]

Third, and most fundamentally, this analysis simply misunderstands the question posed here. That question is not whether there is some world in which the litigation could have come out differently. Of course there is, because the key witness could have been hit by a bus, among other potential unpredictable outcomes. Rather, the question a court must ask in determining antitrust injury is whether a valid and infringed patent precludes showing such antitrust injury. For these purposes, what could have happened in the patent case is a red herring; indeed, even determining what "would" have happened is useful only in the sense that it requires deciding if the patent is valid and infringed, which is the actual question required.

Finally, plaintiffs that cannot show patent invalidity or non-infringement have sometimes sought to prove antitrust injury by instead showing that absent a reverse payment, the parties to the settlement would have entered into an alternative settlement with an earlier entry date.[86] However, the alternative settlement approach misses the point of the injury question, which is not whether the parties could have reached a different settlement, but rather whether there was a valid and enforceable patent that independently bars entry. To illustrate the problem, consider two hypothetical patentees facing meritless patent challenges against identically ironclad patents:

Patentee A is not risk-averse and is before a judge who has a long record of upholding patents and finding them to be infringed. While Patentee A would be willing to make a reverse payment to avoid the small risk it perceives from litigation, it will not take any "alternative settlement" that cuts even a day off of its ironclad patent's term. If it cannot make a reverse payment to settle, it will litigate to the very end and almost certainly win.

Patentee B also has an ironclad patent, but is risk-averse, and before a judge with a long track record of finding ways to invalidate patents. Patentee B is willing to make a reverse payment to avoid the greater risk it perceives from litigation, or alternatively if it could not make a reverse payment, it would allow an earlier entry date to settle.

A plaintiff might be able to show that Patentee B would have accepted an alternative entry date but could not do so with respect to Patentee A simply because Patentee A had a better judicial draw and a higher level of risk tolerance. But because the two patents are identically strong, and indeed

85. *Androgel*, 2018 U.S. Dist.LEXIS 99716, at *52-5352-53 & n.108.
86. *See Wellbutrin*, 868 F.3d at 166.

would be found valid and infringed if push came to shove, the differences between these two parties, or the happenstance of their judicial draws, should not be relevant. The patent is what matters, and where that patent is valid and infringed it serves as an independent regulatory bar to antitrust injury.[87] The willingness to enter an alternative settlement thus tells us nothing about the actual issue of antitrust injury in the face of a valid and infringed patent.[88]

V. CONCLUSION

Shapiro and Lemley's probabilistic theory of patents is at odds with recent Supreme Court authority, is at odds with traditional understandings of property rights, would work a negative sea change in the patent laws, and was not silently adopted the U.S. Supreme Court as the California Supreme Court incorrectly concluded. Probabilistic patent theory must therefore be rejected.

87. *See Nexium*, 842 F.3d at 63; *Wellbutrin*, 868 F.3d at 167-68

88. Nor is it any answer to say that an alternative settlement would have benefited consumers. Any such theory runs squarely into the Supreme Court's longstanding warning against declaring an agreement "anticompetitive" solely in reference to some other, supposedly more procompetitive arrangement. *See* Verizon Communications, Inc. v. Law Offices of Curtis V. Trinko, LLP, 540 U.S. 398, 408-10, 415-16 (2004).